



Mean and Standard Deviation (CAS Calculator)

How to Get a Random Sample from CensusAtSchool

Go to the CensusAtSchool [Random Sampler](#) to download a sample.X

Reference year: (select year) **Sample size:** At least 30 students

Select questions: Belly button height

Location: Select location **Year level:** (select a range of year levels)

To protect privacy there is a rule built into the sampler that the requested sample size cannot exceed 10% entered.

Task:

1. In your CensusAtSchool random sample, find the question about belly button height, and enter the ten numbers as a list in your CAS calculator.

Outliers can be the result of an error or an unusual value. All outliers need to be investigated to see whether they are errors or true outliers. If they are errors, we remove them. We can often identify possible outliers by eye as they are different to the rest of the data set. In this case, we will consider numbers outside the range of 80 – 110cm to be outliers.

2. Calculate the mean _____
3. Calculate the standard deviation _____
4. You are told that the mean belly button height of a sample is 96 cm, with a standard deviation of 11. In the boxes below, insert a realistic sample of ten belly button heights that will give you a mean of 96cm, and a standard deviation of 11, accurate to the nearest whole number.

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5. Ask your neighbour to check that your data sample of ten has a mean of 96cm, and a standard deviation of 11.



"This data sample of ten has a mean of 96cm, and a standard deviation of 11." signed:

Extension:

6. Explain in words how you went about creating a sample of ten numbers that had a mean of 96cm, and a standard deviation of 11.